

Los Angeles County
Emergency Medical Services Agency
Quality Improvement Plan
2014/15



I. Introduction

Los Angeles County EMS Agency Mission Statement

To ensure quality, compassionate, and timely emergency and disaster medical services.

The Los Angeles County (LAC) Emergency Medical Services (EMS) Agency is responsible for the regulatory oversight of the EMS system in Los Angeles County. This oversight function includes quality improvement (QI) activities through the implementation of a comprehensive QI Program. The goal of the QI Program is to establish a coordinated systemwide process to evaluate and improve the delivery of EMS that is consistent with best practices and evidence-based medicine. This QI plan provides the framework for implementing and maintaining the QI Program.

The QI process is a collaborative effort between the EMS Agency and EMS system participants, designed to be educational, not punitive and allows for the protected exchange of information. The purpose of the QI process is to identify and prevent negative incidences from occurring, enhance performance, validate current practice, and provide opportunities to acknowledge excellence within the system. The QI process includes the monitoring and trending of quality indicators that are quantifiable measurements of system performance.

The LAC EMS Agency utilizes quality assurance (QA) processes to monitor current system performance and identify sentinel events or unusual occurrences. QA issues are often resolved through training and education. Both QI and QA activities are essential for the EMS system to monitor compliance with established standards of care and promote continued improvement in the delivery of quality patient care.

The LAC EMS QI plan is written in accordance with the California Code of Regulations, Title 22, Division 9, Chapter 12: *Emergency Medical Services System Quality Improvement* and is consistent with the State of California *Emergency Medical Services System Quality Improvement Program Model Guidelines* and *EMSA 166, Appendix E, EMS Core Quality Measures*.

II. Structure and Organizational Description

- A. Organizational Description – The LAC EMS system is one of the largest multi-jurisdictional EMS systems in the nation, both in size and complexity. This complexity is mirrored in the QI organizational structure. **(Attachment A)**
- B. QI Structure – The LAC EMS Agency QI program employs an integrated process which incorporates all EMS system stakeholders to develop, implement, and support QI activities. The committees described below are the structure that supports the QI Program.

EMS Agency QI Team – The EMS QI Team is the guiding body for EMS QI Program activities. The EMS Agency QI Team meetings are convened as needed to support the QA/QI system needs. Members include, but are not limited to, the following representatives:

EMS Agency Medical Director
EMS Agency Director
EMS Agency Assistant Director(s)
System EMS QI Coordinator
Chief Prehospital Care Operations
Chief Hospital Programs
Data Program Manager
Additional EMS Agency staff, when needed

Responsibilities of the EMS Agency QI Team include the following:

- Cooperate with Emergency Medical Services Authority (EMSA) in carrying out the responsibilities of the statewide EMS QI Program in accordance with the Quality Improvement Program Model Guidelines and EMS Core Quality Measures.
- Cooperate with EMSA in the development, approval, and implementation of required EMS system performance indicators.
- In collaboration with the Technical Advisory Group (TAG) and EMS system QI members, develop, evaluate, and implement LAC EMS QI indicators to facilitate ongoing systemwide monitoring, data collection, evaluation, and reporting of statewide and local system performance measures.
- Maintain and support local QI/Advisory committees to incorporate input from EMS system participants for the development, implementation, and evaluation of performance improvement measures.
- Convene and facilitate Quality Task Forces ad hoc, to assist with resolving specific system quality improvement needs/issues.
- Facilitate and support the development of training and educational programs for EMS system participants as they relate to the implementation of LAC EMS QI activities.

- Facilitate meetings and presentations on systemwide indicators and incorporate input from EMS system participants for the development and implementation of an action plan for improvement.
- Make recommendations for the development, review, and revision of LAC EMS Agency policies and treatment protocols consistent with best practices and evidence based medicine.
- Serve as a resource to support QI among all programs and appropriate stakeholder groups.
- Publish an annual Data Report and provide ongoing reports to the EMS community.
- Review and approve the annual LAC EMS QI Program report to EMSA.

LAC EMS Technical Advisory Group (TAG) – The Los Angeles EMS TAG is a multi-disciplinary team, meetings are convened as needed to meet system needs. Members include, but are not limited to, representative(s) from the following organizations:

LAC EMS Agency Medical Director
LAC EMS Director/Assistant Director(s)
Designated EMS Agency Staff
9-1-1 Receiving Hospital
Public Provider Agency Medical Director
Paramedic Coordinator
Provider Agency Nurse Educator
Paramedic Training Program Director
EMT Training Center representative
Ambulance Association representative
Medical Emergency Medical Dispatch Agency

Ad Hoc members may include the following representatives:
Trauma Hospital Medical Director and/or Trauma Program Manager
Base Hospital
Non-base 9-1-1 Receiving Hospital
Emergency Department Approved for Pediatrics
STEMI Receiving Center
Acute Stroke Center
Sexual Assault Response Team
Law Enforcement
Department of Coroner
Air Operations Provider Agency

Responsibilities of the TAG and its members include, but are not limited to the following:

- Collaborate with the EMS Agency QI Team in carrying out the responsibilities of the statewide LAC EMS QI Program in accordance with EMSA Quality Improvement Program Model Guidelines and EMS Core Quality Measures.
- In collaboration with the LAC QI Team, EMS QI and Advisory Committees, recommend, develop, and evaluate QI indicators to facilitate ongoing systemwide monitoring, data collection, evaluation, and reporting of statewide and local system performance.
- Re-evaluate, recommend, expand, and improve local EMS system indicators, as needed.
- Recommend to the EMS QI Team chartering of Quality Task Forces when issues are identified and review reports produced by the task force.
- Support and protect confidentiality and data integrity.
- Recommend plans for improving the EMS QI plan.

In addition to the EMS Agency QI Team and the TAG, the following QI and Advisory committees support the activities of the QI program.

1. Base Hospital / 9-1-1 Provider Agency QI Committee

Meetings are held quarterly. Members include, but are not limited to:

EMS Agency Medical Director
EMS Agency System QI Coordinator
Designated EMS Agency staff
Prehospital Care Coordinators from each Base Hospital
Paramedic Coordinator and /or Fire Department Nurse Educator from each 9-1-1 Provider Agency

Additional ad hoc members:

Pediatric Liaison Nurse from Emergency Departments Approved for Pediatrics
Air Operations Provider Agency representative
Emergency Medical Dispatch representative

2. Private Non 9-1-1 Provider Agency QI Committee

Meetings are held every four months. Members include, but are not limited to:

EMS Agency Medical Director
EMS Agency System QI Coordinator
Designated EMS Agency staff
Non 9-1-1 BLS/ALS/CCT provider agencies
Additional ad hoc members:

Representatives from approved paramedic training programs
Representatives from approved EMT training programs
9-1-1 Provider Agency member
Emergency Medical Dispatch representative

2.1 Private Provider Agency Approved for 9-1-1 Transport QI Sub-Committee

Meetings are held every four months, directly following the Private Non-911 Provider Agency QI Committee meeting. Members include, but are not limited to:

EMS Agency Medical Director
EMS Agency System QI Coordinator
Designated EMS Agency staff, when needed
Paramedic/EMS QI Coordinator from each of the approved private provider agencies

Additional ad hoc members:

Paramedic/QI Coordinator and/or Fire Department Nurse Educator from each 911 Public Provider Agency utilizing a private provider agency approved for 911 transport

3. Standing Field Treatment Protocol (SFTP) Provider Agency QI Committee

Meetings are convened as needed to address policy and systemwide SFTP issues. Members include, but are not limited to:

EMS Agency SFTP Program Manager
Designated EMS Agency staff
Paramedic Coordinator and/or Fire Department Nurse Educator from each of the approved SFTP provider agencies

4. Trauma Hospital Advisory Committee (THAC) QI Sub-Committee

Meetings are held every other month to address trauma care in LAC. THAC has divided the county into three regions for Trauma QI meeting purposes. The regions meet on a quarterly basis and report back to THAC. Members include, but are not limited to:

EMS Agency Medical Director
EMS Agency Assistant Director(s)
EMS Agency Trauma Program Manager and designated staff
Trauma Medical Director (surgeon) from each designated Trauma Center
Trauma Center Program Manager (RN) from each designated Trauma Center
TAG members, as needed

5. Medical Advisory Council (MAC)

MAC Meetings are held quarterly to assist the EMS Agency Medical Director in carrying out regulatory responsibilities, develop written treatment guidelines and policies to ensure and improve patient care delivery. Members include, but are not limited to:

- EMS Agency Medical Director
- System EMS Agency QI Coordinator
- Designated EMS Agency staff
- Medical Directors from each Base Hospital
- Medical Directors from each Provider Agency
- 9-1-1- Receiving Hospital physician representative
- Trauma Hospital physician representative
- TAG members, as needed

6. ST Elevation Myocardial Infarction(STEMI) Receiving Center (SRC)/ Return of Spontaneous Circulation(ROSC) QI Committee

The SRC/ROSC Program QI meetings are divided into four regions for SRC QI meeting purposes. Meetings are held, at a minimum, biannually to maintain and improve program quality appropriate to the SRC system. Members include, but are not limited to:

- EMS Agency Medical Director
- EMS Agency SRC Program Manager
- At minimum (1) SRC Medical Director and (1) a designated physician from two separate SRC facilities within each of the SRC regions,
- 9-1-1 Provider Agency Paramedic

7. Approved Stroke Center Advisory (ASC) Committee

The ASC program meetings are held every four months, at minimum to maintain and improve quality of stroke care delivery. Members include, but are not limited to:

- EMS Agency Medical Director
- EMS Agency Staff
- ASC Medical Directors from each ASC
- Stroke Coordinators from each ASC

8. Pediatric Advisory Committee (PedAC)

The PedAC meets quarterly to address QI needs and provide expert oversight for pediatric patients in the EMS system. Members include, but are not limited to:

- EMS Agency Pediatric Physician Specialist
- EMS Agency Assistant Director
- EMS Agency EDAP Program Manager

Designated EMS Agency staff
Pediatric Liaison Nurse from each EDAP region
Medical Director of EDAP from each EDAP region
Medical Director, Director, and Coordinator from a Pediatric Medical Center
Medical Director and a Program Manager from a Pediatric Trauma Center

9. EMS Commission Advisory Committees

Meetings of the advisory committees are held every other month. Each advisory committee's membership represents the constituent groups as outlined in the EMS Commission bylaws. Representatives from each advisory group provide input and assist the EMS QI Team, TAG, and systemwide QI committees in carrying out the LAC QI process. The EMS Commission Advisory Committees include the following:

Base Hospital Advisory Committee (BHAC)
Provider Agency Advisory Committee (PAAC)
Data Advisory Committee (DAC),
Education Advisory Committee (EAC)

III. Data Management

A. Data Collection

The EMS Agency obtains information through a variety of methods that include, hard copy review, data collection check sheets, customer surveys, direct observation, site audits, data abstraction, and electronic data exchange. Data collection is primarily conducted via the Trauma and Emergency Medicine Information System (TEMIS). The system was implemented to meet State and County data collection requirements, as well as, assist the EMS Agency in monitoring, evaluating, and coordinating all EMS components.

The LAC EMS system encompasses both public and private emergency services, including 68 EMS provider agencies, 72 (911) receiving hospitals, 21 Paramedic Base Hospitals, 14 Trauma Hospitals, 33 STEMI Receiving Centers (SRC), 37 Approved Stroke Centers (ASC), 42 Emergency Departments Approved for Pediatrics (EDAP), and 8 Pediatric Medical Centers (PMC).

EMS provider agencies, paramedic base hospitals, and trauma centers utilizing paper patient care reports (PCR), capture the required data elements using standard forms (EMS Report Form, Base Hospital Form and Trauma Patient Summary Form). All paramedic base hospitals and trauma centers conduct data entry on site. The data is automatically uploaded to a dedicated File Transfer Protocol (FTP) site every 24 hours.

Many EMS provider agencies continue to send hard copies of the EMS Report Form to the EMS Agency where data is abstracted and entered into TEMIS. Several EMS provider agencies have transitioned to capturing their own data via scanning, data entry or field data capture (utilizing electronic PCR's). The EMS Agency is actively working to transition all provider agencies to electronic PCR's to meet the requirements for reporting on statewide core measures, in addition to, improving local data collection.

Other mechanisms by which the EMS Agency obtains data include direct data input to the LA STEMI and LA Stroke databases by the designated SRC and ASC hospitals. Data is also downloaded from the Stroke: Get With The Guidelines (GWTG) Patient Management Tool. Helicopter EMS (HEMS) data is submitted to the EMS Agency on a monthly basis from the three HEMS providers in LA County. The EMS Agency is in the process of incorporating STEMI, Stroke and HEMS data into TEMIS.

Systemwide hospital diversion, utilization, bed availability and surge capacity are collected via the Rapid Emergency Digital Data Information Network (ReddiNet).

B. Data Validation

Data submitted to TEMIS undergo extensive data quality review and clean up through the following mechanisms:

1. EMS Agency data entry personnel conduct monthly peer review data audits. Identified errors are corrected and overall data entry performance is included in the data entry personnel's periodic performance evaluation report.
2. EMS Provider Agencies that collect electronic data are required to validate their data using the EMS Agency's published EMS Data Validator before submission to the FTP site. The EMS Agency conducts a secondary validation before final upload to TEMIS. Data that fails validation are rejected and sent back to the EMS Provider for correction.
3. Annual data audits are conducted by the EMS Agency for each EMS Provider Agency. A corrective action plan is required for data elements that fall below a 90% compliance rate for accuracy and completeness.
4. Data clean up reports are generated by the EMS Agency on a quarterly basis for Paramedic Base Hospitals and Trauma Centers. In general, a corrective action plans is required for data elements

that fall below a 90% compliance rate for accuracy and completeness.

C. Data Submission:

1. The EMS Agency ensures timely data collection and submission from base hospitals and trauma hospitals through written agreements.
2. Data collection requirements for other specialty care centers are prescribed in the specific specialty care center Standards and/or local policies.
3. Data collection requirements for EMS provider agencies are governed by local policies. Compliance is dependent upon the organizational resources and priorities, as well as, the size (number of personnel) and scope (volume of EMS responses) of the provider agency. Larger agencies tend to require more time in meeting data collection requirements. However, timely data submission to the EMS Agency is improving as the provider agencies transition to electronic data platforms.
4. EMS providers may be required to submit self-reported data utilizing Excel spreadsheets for the following reasons:
 - a. Non-911 transports are not entered into TEMIS.
 - b. Base hospitals and public 911 provider agencies may be required to submit data prior to revision of the TEMIS data dictionary.
 - c. Provider agencies approved for a pilot project with an expanded local scope of practice requiring data not captured in the EMS Agency databases.

D. Data Utilization

1. The EMS Agency utilizes the TEMIS, LA STEMI, LA Stroke, and GWTG databases for both statewide core measures and local system reports. The local reports are utilized for daily operations such as contract monitoring, system audits, policy revision, performance monitoring, and QI activities. The databases are also used to provide the information needed to analyze the potential impact of hospital diversions and closures.

2. Self-reported data utilizing Excel spreadsheets are utilized for purposes of evaluating performance and ensuring safety when new medications, treatment and/or devices implemented in the system.

B. Limitations

1. Separate Databases: the existence of multiple databases is not ideal for timely reporting. Multiple data entry and data abstraction are conducted on the same patient. Data analysis is resource-intensive when data elements are found in the various databases.
2. Multiple System Participants: data validation and transmission has become more complex as more EMS provider agencies move toward utilizing various electronic patient care reporting software applications. Changes to the reporting standards often require additional time and expense.
3. Data Quality: current methods of data capture require extensive data audits and cleanup are needed to ensure valid and reliable data.

IV. Quality Indicators

A. EMSA Core Quality Measures:

The EMS Agency historically has participated in statewide data submission to the California Emergency Medical Services Information System. As the EMS Authority transitions over to the National Emergency Medical Services Information System data dictionary, the EMS Agency will continue to actively participate in statewide data collection through the submission of core measure data outlined in EMSA #166, Appendix E, EMS Quality Improvement Program Guidelines/Core Quality Measures. To ensure reliable and valid data, the EMS Agency will continue to update our data dictionary and provide training/feedback to EMS personnel on documentation of the core measure data elements with the exception of ambulance response times by zones. The LAC EMS system is not designed to collect data by zones.* Alternatively, systemwide ambulance response times are reported and collected. The core measure datasets for the years 2009-2012 are as follows:

CCR Title 22, Div 9, Chap 12	SET NAME	SET ID	PERFORMANCE MEASURE NAME
100404			
D Clinical Care and Patient Outcome	Trauma (n=2)	TRA-1	Scene time for severely injured trauma patients
		TRA-2	Direct transport to trauma center for severely injured trauma patients meeting criteria
	Acute Coronary Syndrome (n=5)	ACS-1	Aspirin administration for chest pain/discomfort
		ACS-2	12 lead EKG performance
		ACS-3	Scene time for suspected heart attack patients
		ACS-4	Advance hospital notification for suspected acute coronary syndrome
		ACS-5	Direct transport to PCI center for suspected acute coronary syndrome (ACS) patients meeting criteria
	Cardiac Arrest (n=4)	CAR-1	AED application prior to EMS Arrival
		CAR-2	Out-of-hospital cardiac arrests return of spontaneous circulation
		CAR-3	Out-of-hospital cardiac arrests survival to emergency department discharge
		CAR-4	Out-of-hospital cardiac arrests survival to hospital discharge
	Stroke (n=5)	STR-1	Identification of suspected stroke in the field
		STR-2	Glucose testing for suspected stroke patients
		STR-3	Scene time for suspected stroke patients
		STR-4	Advance hospital notification for suspected stroke
		STR-5	Direct transport to stroke center for suspected stroke patients meeting criteria
	Respiratory (n=2)	RES-1	CPAP given for patients with respiratory distress
		RES-2	Beta2 agonist administration
	Pediatric (n=2)	PED-1	Pediatric asthma patients receiving bronchodilators
		PED-2	Transport to pediatric trauma center
	Pain Intervention (n=2)	PAI-1	Pain intervention
		PAI-2	Results of pain intervention

CCR Title 22, Div 9, Chap 12 100404	SET NAME	SET ID	PERFORMANCE MEASURE NAME
E Skills Maintenance and Competency	Performance of Skills (n=2)	SKL-1	Endotracheal intubation success rate
		SKL-2	End-Tidal CO2 performed on any successful endotracheal intubation
F Transportation and Facilities *	Response and Transport (n=3)	RST-1	* Ambulance response time by ambulance zone (Emergency)
		RST-2	* Ambulance response time by ambulance zone (Non-Emergency)
		RST-3	Transport of patients to hospital
G Public Education	Cardiopulmonary Resuscitation (n=1)	PUB-1	Out-of-hospital cardiac arrests receiving bystander (non-EMS Personnel/Responder) CPR

B. Local Quality Performance Indicators:

Category	Reporting Frequency	Indicator Summary	Method of Collection	EMS Agency Section Responsible
Personnel	Annually	Percentage of Emergency Medical Technician certifications that result in disciplinary action	EMS Agency Prehospital Emergency Personnel System Information (PEPSI) Records	Certification and Program Approvals
Equipment	Quarterly	Percentage of medical cardiac arrest patients receiving bag-mask ventilation and waveform capnography	TEMIS, Excel Spreadsheet	System QI

Category	Reporting Frequency	Indicator Summary	Method of Collection	EMS Agency Section Responsible
Documentation	Quarterly	Percentage of public provider agencies compliant with documentation of mandatory data fields (Attachment B)	TEMIS	Prehospital Care Programs
Documentation	Quarterly	Percentage of base hospitals compliant with documentation of mandatory data field (Attachment C)	TEMIS	Hospital Programs
Clinical Care and Patient Outcomes	Quarterly	90 percentile for time from STEMI Referral Center door to PCI at the SRC for STEMI-identified patients ≤ 90 min	STEMI Database	SRC/ROSC Program
	Quarterly	Percent of patients transported by private provider agencies (non-911) with a pain score of $\geq 6/10$ receive a pain intervention	Excel Spreadsheet	System QI
Skills Competency	Quarterly	Percentage of 12-Lead ECGs that are poor quality resulting in a false positive for STEMI	STEMI Database	Hospital Programs
Transportation/Facilities	Quarterly	90 th percentile scene time ≤ 10 minutes for hypotensive penetrating trauma patients transported to a designated Trauma Center	TEMIS	Trauma Program

Category	Reporting Frequency	Indicator Summary	Method of Collection	EMS Agency Section Responsible
	Annually	Volume of patients transported by 911 from acute care hospitals, by chief complaint	TEMIS	Hospital Programs
Public Education and Prevention	Quarterly	Percentage of cardiac arrest 9-1-1 responses that receive bystander CPR	TEMIS	Hospital Programs
	Annually	Number of citizens trained in “hands-only” on SideWalk CPR	Self-reported utilizing a standardize report form	Prehospital Care Programs
Risk Management	Annually	Number of patient safety events entered in the Safety Intelligence system (LAC reporting system)	Excel Spreadsheet	System QI

V. Evaluation of System Indicators

- A. The System EMS QI Coordinator and designated staff will prepare quarterly reports on system performance indicators to be utilized by the QI Team, TAG, and Advisory Committees to ensure systemwide evaluation.
- B. Under the direction of the EMS Agency Medical Director, the EMS Agency QI Team will analyze system reports generated by each EMS Agency section responsible for reporting on current local performance indicators and State core measures.
- C. Presentations on performance indicators will be prepared in the most appropriate format to allow for ease of interpretation of data. Formats most commonly utilized include line charts, bar graphs, and flowcharts.

VI. Action to Improve

- A. The EMS Agency, under the direction of the Los Angeles County Department of Health Services, utilizes the FOCUS PDSA model for performance improvement. Below are a diagram of this process and a brief description of the steps involved.



1. **F**ind a process to improve; improvement needs are identified by the EMS Agency QI Team in collaboration with the TAG, QI and Advisory groups.
2. **O**rganize the process utilizing the team most familiar with the process related to the system process identified.
3. **C**larify current knowledge of the process by collecting information and reviewing current trends.
4. **U**nderstand capabilities and causes for variations in processes by utilizing brainstorming techniques and fishbone diagrams or flowcharts.
5. **S**elect a strategy or process for improvement that will most likely reduce or eliminate the causes for variation in performance.
6. **P**lan, determine objectives and develop plan in agreement with system participants.
7. **D**o, carry out the action according to established plan.
8. **S**tudy findings, the EMS QI Team with system input will analyze the findings, compare with hypothesis, and prepare a summary for trend report.
9. **A**ct on findings, the EMS QI Team in collaboration with the TAG, QI and Advisory groups will determine performance improvement needs. A Quality Task Force may be chartered, if needed, to carry out specific performance improvement plans.

VII. Training and Education

- A. Under the direction of the EMS Agency Medical Director, in collaboration with the EMS Agency QI Team, TAG and system participants, performance measures related to clinical treatment protocols and medical control guidelines specific to patient care delivery are evaluated based on new regulations, standards of practice, and policy directives.
- B. The effectiveness of the QI process is related to the effectiveness of training and educational activities. Due the size and complexity of our system, training and education is accomplished through a variety of mechanisms:
 - 1. Quality improvement and advisory meetings – information needed for improving local system and statewide performance is disseminated to committee members for training and education of providers responsible for direct patient care.
 - 2. EMS Update – the EMS QI Team, TAG, and Paramedic Training Institute (PTI) with system input, develop the mandatory annual EMS Update that address educational and training needs related to performance improvement and the systemwide delivery of quality patient care.
 - 3. EMS Agency Newsletter – the EMERGIPRESS is utilized to provide information and communicate systemwide issues to EMS personnel or providers.
 - 4. The Education Advisory Committee (EAC) – the EMS Agency EAC utilizes quality improvement findings and performance improvement action plans when making recommendations to primary EMT and paramedic training programs for systemwide training and education.
 - 5. EMS Data Report – the EMS Agency publishes an annual data report that provides valuable feedback to the EMS community and citizens of Los Angeles on system demographics and performance.
(Attachment D, E, and F for years 2012, 2013, and 2014)
- C. The EMS Agency QI Team, TAG, QI and other advisory groups review policies and procedures to insure consistency with the EMSA and LAC EMS QI plan.
- D. Once a performance improvement plan has been successfully implemented, the EMS Agency will post all policies and system updates to its website to allow timely access by all EMS participants.

VIII. Annual Update

The annual update is a written account of the progress of LAC EMS Agency's QI activities. The System EMS QI Coordinator, in conjunction with the EMS Agency QI Team, will prepare an annual written summary. This summary will be presented to the EMS Commission and all of the Advisory Committees of the Commission.

As part of the annual update, the EMS Agency QI Team, with input from the TAG and the other QI committees, will revise the QI plan for the coming year, including plans for follow-up, future goals and objectives, and indicators to be monitored.

The following template will be used to complete the annual summary:

Indicators Monitored	Findings/Issues Identified	Action Needed	Responsible Entity